

Value Analysis/Value Planning Study

Detroit River International Crossing DRIC

February 2, 2007

VA/VP Scope

The VE process is divided into two sections;

Value Analysis (VA)

and

Value Planning (VP)

VA/VP Scope

1. Review the 7 alternatives of the interchange that links the Plaza and I-75 and **validate** its merits. (Value Analysis)
2. **Explore other feasible alternatives** to assure that all viable options are considered. (Value Planning)

Section #1

Value Analysis

Performance Matrix

Excellent = 5
Very Good = 4
Good = 3
Acceptable = 2
Poor = 1
Unacceptable = 0

Criteria	Weight of Importance	Interchange 1		Interchange 2		Interchange 3		Interchange 4		Interchange 5		Interchange 6		Interchange 1 Mod	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
1 Access to and From Plaza	10	4.6	46.0	4.6	46.0	4.0	40.0	3.0	30.0	2.8	28.0	4.6	46.0	4.6	46.0
2 Traffic Operations on I-75	10	4.2	42.0	3.2	32.0	4.0	40.0	3.6	36.0	3.4	34.0	3.8	38.0	3.4	34.0
3 Local Access within Corridor	7	3.0	21.0	3.0	21.0	3.0	21.0	3.6	25.2	3.8	26.6	2.8	19.6	3.0	21.0
4 Local Traffic Operations	6	3.0	18.0	4.0	24.0	2.6	15.6	2.8	16.8	4.4	26.4	2.4	14.4	4.0	24.0
5 Bridge Geometry/Retaining Walls	5	3.4	17.0	2.8	14.0	4.2	21.0	2.6	13.0	3.0	15.0	3.2	16.0	3.0	15.0
Total Weighted Rating	38		144		137		138		121		130		134		140
Average Weighted Rating		3.79		3.61		3.62		3.18		3.42		3.53		3.68	

Acceptance Matrix

Excellent = 5
 Very Good = 4
 Good = 3
 Acceptable = 2
 Poor = 1
 Unacceptable = 0

Criteria	Weight of Importance (1-10)	Interchange 1		Interchange 2		Interchange 3		Interchange 4		Interchange 5		Interchange 6		Interchange 1Mod	
		Rating (1-5)	Weighted Rating	Rating (1-5)	Weighted Rating	Rating (1-5)	Weighted Rating	Rating (1-5)	Weighted Rating	Rating (1-5)	Weighted Rating	Rating (1-5)	Weighted Rating	Rating (1-5)	Weighted Rating
Protect Community/Neighborhood Characteristics	10	4.0	40.0	4.0	40.0	3.8	38.0	1.6	16.0	2.2	22.0	3.0	30.0	3.8	38.0
2 Impact to NS Neighborhood	7	3.6	25.2	3.6	25.2	4.0	28.0	2.4	16.8	2.2	15.4	3.0	21.0	3.6	25.2
3 Constructability	8	3.4	27.2	3.4	27.2	2.2	17.6	3.0	24.0	3.6	28.8	3.4	27.2	3.4	27.2
4 Impact to Utilities	6	3.8	22.8	3.8	22.8	2.4	14.4	2.2	13.2	2.2	13.2	3.0	18.0	3.4	20.4
5 Driver comfort	9	3.6	32.4	3.0	27.0	3.6	32.4	3.2	28.8	3.4	30.6	3.2	28.8	4.0	36.0
6 Impact to EW Neighborhood	7	3.8	26.6	3.8	26.6	3.6	25.2	2.2	15.4	2.4	16.8	4.0	28.0	4.0	28.0
Total Weighted Rating	47		174		169		156		114		127		153		175
Average Weighted Rating		3.71		3.59		3.31		2.43		2.70		3.26		3.72	

Value Index

				Interchange 1	Interchange 2	Interchange 3	Interchange 4	Interchange 5	Interchange 6	Interchange 1 Mod	
Ratings	Performance - P			3.79	3.61	3.62	3.18	3.42	3.53	3.68	
	Acceptance - A			3.71	3.59	3.31	2.43	2.70	3.26	3.72	
	Cost - C			4.60	3.80	4.60	2.30	3.70	4.00	3.30	
	P	A	C								
Value Index	1	1	1	4.03	3.67	3.84	2.64	3.27	3.59	3.57	
	2	1	1	3.97	3.65	3.79	2.77	3.31	3.58	3.60	
	1	2	1	3.95	3.65	3.71	2.59	3.13	3.51	3.61	
	1	1	2	4.17	3.70	4.03	2.55	3.38	3.70	3.50	
	2	2	1	3.92	3.64	3.69	2.71	3.19	3.51	3.62	
	2	1	2	4.10	3.68	3.95	2.68	3.39	3.66	3.54	
	1	2	2	4.08	3.68	3.89	2.53	3.24	3.61	3.54	

Summary

- **Based on the evaluation, Interchanges 1 and 3 are ranked the highest.**
- **If cost is not part of the evaluation at this stage, Interchange 1 Mod should also be considered.**
- **In general, all interchange options are rated good for performance.**

Section #2

Value Planning

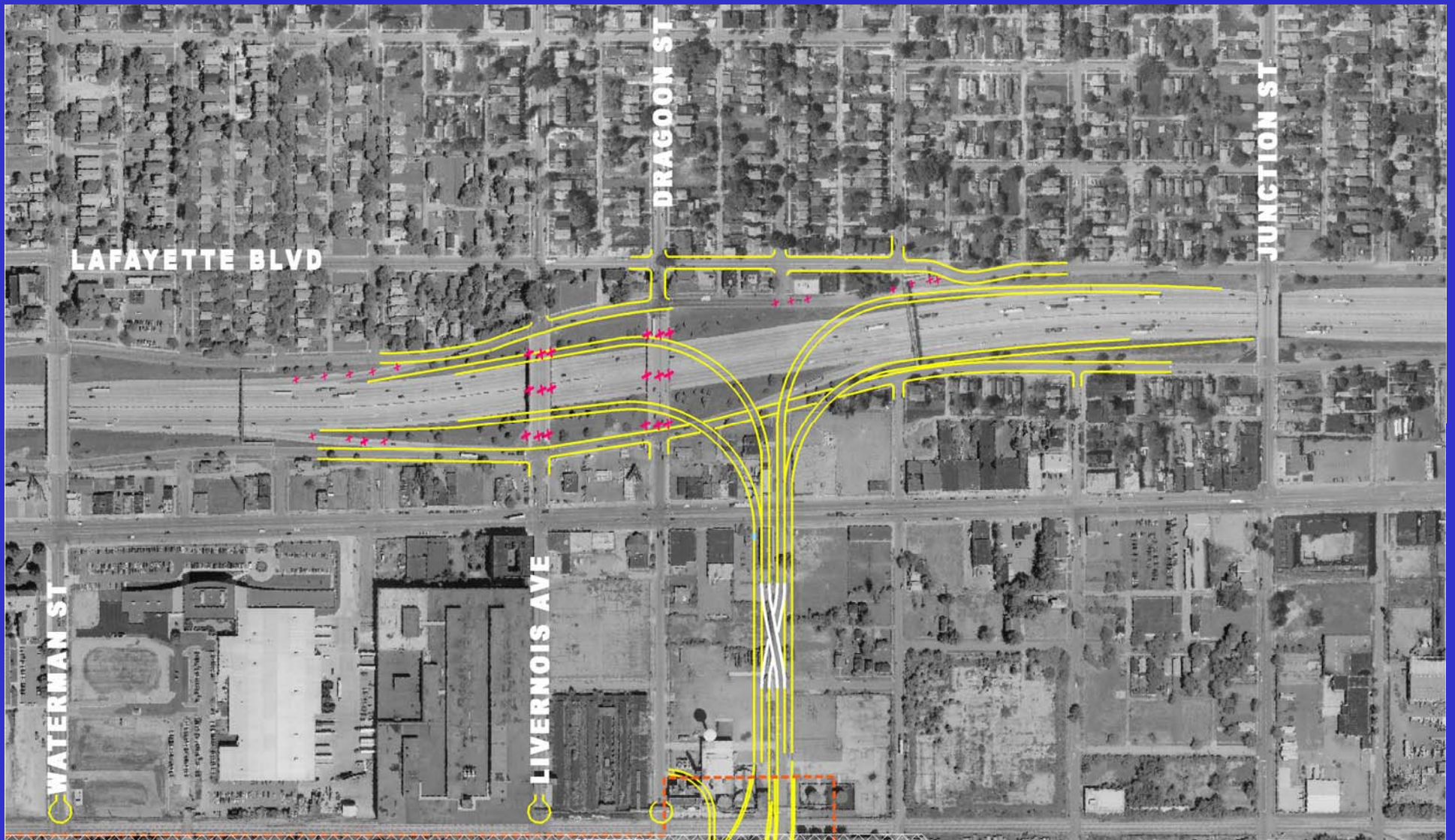
Interchange VP1



Interchange VP1

- **Advantages:**
 - Maintain Clark and Springwells Interchanges.
 - Localizes impacts to Service Drives.
 - Requires less ROW.
 - Reduces impacts North of I-75.
- **Disadvantages:**
 - Design speed 30 MPH in circle.
 - Close Livernois bridge.
 - Closes Livernois/Dragoon Interchange.
 - Impacts 64 unit Building.

Interchange VP3



Interchange VP3

- **Advantages:**
 - **Maintain Clark and Springwells Interchanges.**
 - **Localizes impacts to Service Drives.**
 - **Requires less ROW.**
 - **Reduces impacts North of I-75.**
 - **Localizes impact to Delray.**
 - **Less Bridge area.**
 - **Reduces bridges over Fort Street.**

Interchange VP3

- **Disadvantages:**
 - Design speed 30 MPH.
 - Close Dragoon and Livernois Bridges.
 - Close Livernois/Dragoon Interchange.
 - Discontinuity in Service Drives.

Recommendations

- **VP Team recommends that Interchanges VP1 and VP3 be considered for further study.**

Design Suggestions

- 1. Reconstruct I-75 between River Rouge Bridge and Grand Boulevard.**
- 2. Reconstruct I-75 between Springwells and Grand Boulevard.**
- 3. Reconstruct I-75 within Project Limits.**
- 4. Create CD roads and Eliminate Service Drives.**

Design Suggestions

- 5. Abandon Local roads between Fort Street and NB Service Drive.**
- 6. Combine Plaza and Local Off Ramps.**
- 7. Combine Plaza and Local On Ramps.**
- 8. Close I-75 during Construction.**

Design Suggestions

9. Perform ROW acquisition early.
10. Perform utility relocation early.
11. Use Purchase contract for long lead items.
12. Start detailed survey early.
13. Perform SUE advance contract.